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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/610,041	07/05/2000	Koichi Tamura	13756	5032
23389	7590	05/06/2004	EXAMINER	
SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA GARDEN CITY, NY 11530			HO, CHUONG T	
			ART UNIT	PAPER NUMBER
			2664	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/610,041

Applicant(s)

TAMURA, KOICHI

Examiner

Chuong Ho

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 and 22-24 is/are allowed.
- 6) ☒ Claim(s) 1-4, 11, 13, 14 and 16-19 is/are rejected.
- 7) ☐ Claim(s) 5, 7, 9, 12, 6, 8, 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                          |                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                              | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                     | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2,4</u> . | 6) <input type="checkbox"/> Other: ____                                                |

**DETAILED ACTION**

1. Claims 1-24 are pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 17, 18, 19, 2, 11, 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulist et al. (U.S. Patent No. 6,229,842) in view of Atarius et al. (U.S. Patent No. 6,373,882 B1).

In the claim 1, Schulist et al. discloses system and method for determining valid paths in spread spectrum radio receiver are described. According to an exemplary embodiment of the present invention, a path selection unit is used to determine valid peaks in a delay power profile (DPP) signal (see col. 2, lines 63-65); comprising:

a delay profile calculating section ( set of serarchers) for calculating a delay profile using a reception signal (see figure 2, col. 4, lines 12-25).

a finger path allocating section (7) (see figure 2) for allocating path positions to plurality of fingers (d1'....dN') (see col. 6, lines 41-43) (see col. 4, lines 12-25) on the basis of the delay profile (see col. 2, lines 65-67) calculated by delay profile calculating section;

a delay profile calculation cycle in delay profile calculating section is variable (see col. 1, lines 16-29).

However, Schulist et al. is silent to disclosing a rake reception section for combining dispreading results output from plurality of fingers.

Atarius et al. (U.S. Patent No. 6,373,882 B1) discloses an environment variation estimator is implemented in a CDMA mobile station (see abstract); comprising:

a rake reception section for combining dispreading results output from plurality of fingers (see figures 3, 5).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Schulist with the teaching of Atarius to provide a rake reception section for combining dispreading results output from plurality of fingers in order to optimize the duty cycle of the searcher .

4. In the claim 17, 18, Schulist et al. discloses system and method for determining valid paths in spread spectrum radio receiver are described. According to an exemplary embodiment of the present invention, a path selection unit is used to determine valid peaks in a delay power profile (DPP) signal (see col. 2, lines 63-65); comprising:

a delay profile calculating section ( set of serarchers) for calculating a delay profile using a reception signal (see figure 2, col. 4, lines 12-25);

a finger path allocating section (7) (see figure 2) for allocating path positions to plurality of fingers ( $d_1' \dots d_N'$ ) (see col. 6, lines 41-43) (see col. 4, lines 12-25) on the basis of the delay profile (see col. 2, lines 65-67) calculated by delay profile calculating section;

a reception data processing section for demodulating an output from rake reception section and outputting resultant digital data as a demodulated output signal (see figure 4);

a known data table in which known data to be contained in a reception signal is stored in advance (see col. 3, lines 1-5);

a threshold table in which a threshold associated with an error rate of a reception signal is stored in advance (see col. 3, lines 1-5);

a reception data comparing section for obtaining an error rate of the reception signal by comparing known data contained in an output signal from reception data processing section with the known data stored in known data table, and outputting a signal in accordance with a result of comparison between the error rate and the threshold stored in threshold table (see col. 3, lines 1-5);

a delay profile calculation control section for outputting a control signal for controlling operation of delay profile calculating section on the basis of an output from reception data comparing section (see col. 3, lines 1-5).

However, Schulist et al. is silent to disclosing a rake reception section for combining dispreading results output from plurality of fingers.

Atarius et al. (U.S. Patent No. 6,373,882 B1) discloses an environment variation estimator is implemented in a CDMA mobile station (see abstract); comprising:

a rake reception section for combining dispreading results output from plurality of fingers (see figures 3, 5).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Schulist with the teaching of Atarius to provide a rake reception section for combining despreading results output from plurality of fingers in order to optimize the duty cycle of the searcher .

5. In the claim 19, Schulist et al. discloses system and method for determining valid paths in spread spectrum radio receiver are described. According to an exemplary embodiment of the present invention, a path selection unit is used to determine valid peaks in a delay power profile (DPP) signal (see col. 2, lines 63-65); comprising:

Reception quality is ensured and power consumption is reduced by controlling a delay profile calculation cycle for obtaining path positions allocated to fingers on the basis of reception characteristic (see figure 2, col. 4, lines 12-25, col. 6, lines 41-43, col. 3, lines 1-5);

However, Schulist et al. is silent to disclosing a rake reception section for combining despreading results output from plurality of fingers.

Atarius et al. (U.S. Patent No. 6,373,882 B1) discloses an environment variation estimator is implemented in a CDMA mobile station (see abstract); comprising:

a rake reception section for combining despreading results output from plurality of fingers (see figures 3, 5).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Schulist with the teaching of Atarius to provide a rake reception section for combining despreading results output from plurality of fingers in order to optimize the duty cycle of the searcher .

6. In the claims 2, Schulist et al. discloses system and method for determining valid paths in spread spectrum radio receiver are described. According to an exemplary embodiment of the present invention, a path selection unit is used to determine valid peaks in a delay power profile (DPP) signal (see col. 2, lines 63-65); comprising:

- a delay profile calculating section ( set of serarchers) for calculating a delay profile using a reception signal (see figure 2, col. 4, lines 12-25);

- a finger path allocating section (7) (see figure 2) for allocating path positions to plurality of fingers ( $d_1' \dots d_N'$ ) (see col. 6, lines 41-43) (see col. 4, lines 12-25) on the basis of the delay profile (see col. 2, lines 65-67) calculated by delay profile calculating section;

- a reception characteristic detecting section (9, see figure 2) for detecting reception characteristics of the reception signal; and a delay profile calculation control section (11, figure 2) for controlling a delay profile calculation cycle in delay profile calculating section (set of searches) on the basis of the reception characteristics detected by reception characteristic detecting section (9, figure 2) (see col. 4, lines 12-25, col. 6, lines 41-43).

However, Schulist et al. is silent to disclosing a rake reception section for combining despreading results output from plurality of fingers.

Atarius et al. (U.S.Patent No. 6,373,882 B1) discloses an environment variation estimator is implemented in a CDMA mobile station (see abstract); comprising:

- a rake reception section for combining despreading results output from plurality of fingers (see figures 3, 5).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Schulist with the teaching of Atarius to provide a rake reception section for combining disspreading results output from plurality of fingers in order to optimize the duty cycle of the searcher .

7. In the claim 11, Schulist et al. discloses delay profile calculating section calculates an average delay profile by averaging values obtained by performing delay profile calculation by a predetermined number of times, finger path allocating section allocates path positions to plurality of fingers on the basis of the average delay profile, and delay profile calculation control section controls the number of times of calculations in delay profile calculating section on the basis of the reception characteristics detected by reception characteristic detecting section (see figure 2, col. 2, lines 65-67, col. 4, lines 12-25, col. 6, lines 41-43).

8. In the claim 13, Schulist et al. discloses delay profile calculation control section (11) decreases the number of times of calculations in delay profile calculating section when the reception characteristic detected by reception characteristic detecting section improve, and increases the number of times of calculations in delay profile calculating section when the reception characteristics deteriorate (see col. 4, lines 18-25).

9. In the claim 14, Schulist et al. discloses system and method for determining valid paths in spread spectrum radio receiver are described. According to an exemplary embodiment of the present invention, a path selection unit is used to determine valid peaks in a delay power profile (DPP) signal (see col. 2, lines 63-65); comprising:



a delay profile calculating section ( set of serarchers) for calculating a delay profile using a reception signal (see figure 2, col. 4, lines 12-25);

a finger path allocating section (7) (see figure 2) for allocating path positions to plurality of fingers ( $d_1' \dots d_N'$ ) (see col. 6, lines 41-43) (see col. 4, lines 12-25) on the basis of the delay profile (see col. 2, lines 65-67) calculated by delay profile calculating section;

a reception characteristic detecting section (9, see figure 2) for detecting reception characteristics of the reception signal; and a delay profile calculation control section (11, figure 2) for controlling a delay profile calculation cycle in delay profile calculating section (set of searches) on the basis of the reception characteristics detected by reception characteristic detecting section (9, figure 2) (see col. 4, lines 12-25, col. 6, lines 41-43).

However, Schulist et al. is silent to disclosing a rake reception section for combining dispreading results output from plurality of fingers.

Atarius et al. (U.S.Patent No. 6,373,882 B1) discloses an environment variation estimator is implemented in a CDMA mobile station (see abstract); comprising:

a rake reception section for combining dispreading results output from plurality of fingers (see figures 3, 5).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Schulist with the teaching of Atarius to provide a rake reception section for combining dispreading results output from plurality of fingers in order to optimize the duty cycle of the searcher .

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10. Claims 4, 3, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Schulist-Atarius) in view of Bejjani et al. (U.S. Patent No. 6,510,143 B1).

In the claims 4, 3, the combined system (Schulist-Atarius) discloses the limitations of claim 2 above.

However, the combined system (Schulist-Atarius) is silent to disclosing reception characteristic detecting section a reception SIR.

Bejjani et al. discloses reception characteristic detecting section a reception SIR (see col. 2, lines 18-21).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Schulist-Atarius) with the teaching of Bejjani to provide reception characteristic detecting section a reception SIR in order to create a multipath channel and interference among a large number of paths with different time delays.

11. In the claim 16, Bejjani et al. discloses delay profile calculation control section sets an in-phase addition count in delay profile calculating section to a predetermined count in accordance with a predetermined threshold when the reception characteristics detected by reception characteristic detecting section are good as compared with the predetermined threshold (see col. 2, lines 18-21, lines 63-67).

***Allowable Subject Matter***

12. Claims 20, 22, 23, 24 are allowed.

13. The following is an examiner's statement of reasons for allowance: the prior art (6229842, 6373882, 6510143, 6650692) of the record does not appear to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited from independent claims 20, 22: "stopping delay profile calculation processing when a result of the comparison in the comparison step indicates that the reception characteristic value is larger than the predetermined threshold".

14. The following is an examiner's statement of reasons for allowance: the prior art (6229842, 6373882, 6510143, 6650692) of the record does not appear to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited from independent claims 23, 24: "the step of decreasing the number of times of calculations in obtaining an average delay profile when a result of the comparison in the comparison step indicates that the reception characteristic value is larger than the predetermined threshold".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

15. Claims 5,7,9,12, 6,8,10, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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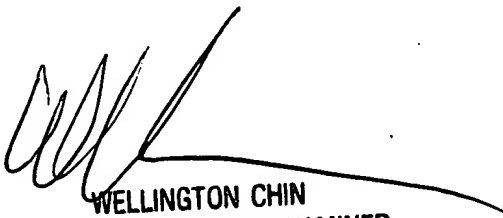
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Ho whose telephone number is (703) 306-4529. The examiner can normally be reached on 8:00AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (703) 305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chuong Ho  
Examiner  
Art Unit 2664

05/01/04

  
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